



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,935	06/21/2001	David G. Schmidt	16236-0251 (41966-248499)	4854

7590 06/03/2003

John K. McDonald, Ph.D.
KILPATRICK STOCKTON LLP
2400 Monarch Tower
3424 Peachtree Road, N.E.
Atlanta, GA 30326

EXAMINER

VIJAYAKUMAR, KALLAMBELLA M

ART UNIT	PAPER NUMBER
----------	--------------

1751

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,935

Applicant(s)

SCHMIDT, DAVID G.

Examiner

Kallambella Vijayakumar

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 18-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-47 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Paper 1 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4/5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

- This application claims the benefit of priority based on the provisional application no. 60/213,945 filed 06/23/2000.
- The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
- The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A (1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-17, drawn to "composition," classified in class 252, subclass 625.
- II. Claims 18-22, drawn to "method of making H₂", classified in class 423, subclass 657.
- III. Claims 23-30, drawn to "method of making composition", classified in class 423, subclass 5.
- IV. Claims 31-34, drawn to "battery", classified in class 429, subclass 5.

V. Claims 35-38, drawn to “capacitor”, classified in class 361, subclass 274.

VI. Claims 39-47, drawn to “fuel-cell”, classified in class 429, subclass 12.

- Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case hydrogen can be produced by contacting sodium with water.
- Inventions III and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the composition could be made by freeze-drying techniques.
- Inventions IV and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the battery could be made from zinc, carbon and manganese.
- Inventions V and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for

using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the capacitor could be made from alkaline earth titanates.

- Inventions VI and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the fuel cell electrodes could be made from Nickel.
- Inventions IV/V/VI and I are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as radiation/conductive filler in a paste and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

- Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group I is not required for Group II-VI, and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
- During a telephone conversation by Carol Chaney with David Wigley on 05/14/03 a provisional election was made with traverse to prosecute the invention of Group- I, Claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-47 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102
Claim Rejections - 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
-
- The examiner notes a very broad definition given by the applicants in the specification for the terms “alloy” to be the mixture of components that is away from the normal terminology for alloys, and “ionizing radiation” to be a source or device emitting radiation that could be placed in contact with alloy components, thus not necessarily be an integral part of the composition (Page 12, Line 18, Line 26; Page 13, Lines: 20-24) and the examiner gives broad interpretation for those terms in the interpretation of claims. Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

- Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kowa (JP 61-012276).
 - Kowa discloses a composition of kneaded powders comprising of many elements including Ni (1%), Ge (2%), Th (2%), Al (5%) and Na (3%), wherein radioactive rays were observed from Th (Abstract). Nickel meets the requirement of a transition metal, Ge as an electronic conductor, Th as an ionizing radiation source, Al, Na for an alkali metal, and the amount of Al and Na present in the composition would meet the Al-metal/Alkali-metal ratio requirement in claim-12. All the limitations of the instant claims are met.
 - The reference is anticipatory.
- Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Bumbalek (DE 2702638).
 - Bumbalek disclose the recovery of Au, Pa, Re, Rh, Pt, Lanthanides, and the natural isotopes of U, Th, and Ra from a composition comprising these materials from the peel of the tropical fruits. Pt being a transition metal, Au as an electronic conductor, Th as an ionizing radiation source would meet the limitations of the instant claims (Abstract). All the limitations of the instant claims by the applicants are met.
 - The reference is anticipatory.

- Claims 1-11, 13-17 rejected under 35 U.S.C. 102(b/e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rehfeld (GB 1420492) or Malozemoff et al (US Patent # 6,436,317).
- Rehfeld discloses vacuum deposited coatings obtained by the simultaneous evaporation of a carrier and together with at least one element from a group of many elements including Al, Ge, Li, Pt, Ni, Th etc including their compounds or alloys of these elements thereby varying the electrical conductivity, magnetic, optical, radioactive, photoelectric and semiconductive properties (Abstract, Page-1, Line: 50 to Page -2, Line: 110). All the limitations of the instant claims by the applicants are met.
- The reference is anticipatory
- Malozemoff et al disclose various non-magnetic alloy compositions as substrates for the superconducting layer, wherein an alloy composition comprising of Ni, Cr, Al, Ge, Li, Th and a list of many other elements (Col-8, Lin-66 to Col-9, Line-62). All the limitations of the instant claims are met.
- The reference is anticipatory.
- In the alternative that the disclosure by either Rehfeld or Malozemoff et al be insufficient to arrive at the limitations of the instant claims it would be obvious for a person of ordinary skill to succeed with reasonable expectation of success by making changes to the composition based on many elements and variations suggested independently by either Rehfeld or Malozemoff.

- Claims 1-4, 9-10 are rejected under 35 U.S.C. 102(e/a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mills et al (US Patent # 6,024,935).
 - Mills et al disclose the composition of electro-catalytic/catalytic materials for dissociating hydrogen comprising elements, compound, alloy or mixtures of various transition and inner-transition elements including, Fe, Pt, Ni, Th, Pa, U, carbon and graphite. The pH for the aqueous electro-catalytic solution comprising of Rb^+ or K^+ was in the range of 7.1-14 (Col-32, Lines: 13-15, Col-33, Lines: 46-60; Col-34, Lines: 58 to Col-35, Line-5). Ni being a transition metal, Th a radioactive material, carbon/graphite being the electronic conductor, K^+ being an alkali metal would meet the limitations of the instant claims by the applicants. All the limitations of the instant claims are met.
 - The reference is anticipatory.
 - In the alternative that the disclosure by either Mills et al be insufficient to arrive at the limitations of the instant claims it would be obvious for a person of ordinary skill to make changes to the composition based on many elements taught by Mills to derive their benefits with reasonable expectation of success.
- Claims 1-8 are rejected under 35 U.S.C. 102(e/a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gamo et al (EP 293 660).
 - Gamo et al disclose a hydrogen storage electrode comprising a body of an alloy AB_a or a hydride wherein A represents at least one element selected from Al, Si.... and B represents at least one element selected from Ni, Fe...., Mm being a mixture of rare-earths and Th. Ni being a transition metal, Si an electronic conductor, Al and Th a

radioactive element meet the limitations of the instant claims by the applicants. All the limitations of the instant claims are met.


- The reference is anticipatory.
- In the alternative that the disclosure by Gamo et al be insufficient to arrive at the limitations of the instant claims it would be obvious for a person of ordinary skill to make changes to the composition based on many elements taught by Gamo et al to derive their benefits with reasonable expectation of success.

Conclusion

- The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ovshinsky et al (US Patent # 5,616,432) discloses Mg-Ni alloys comprising of Al/Th/Si/Li. Weinhold (DE 2313318) discloses alloys comprising of the elements preferred by the applicants. Harris et al (US Patent# 4,952,465) disclose the amorphous metal alloys comprising of Pt, Ni, Mg, Ti, Th, Al, Li and K. Hausdorf (DE 19731021) disclose metal implant alloys comprising of Alkaline earth metal/Al/Ni/Th/Sn/Si/Li. Megy et al (WO 87/05747) report zinc based alloys comprising of Al/Ni/Ge/U/Th/Cs.
- Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 703-305-4931. The examiner can normally be reached on M-Th, 07:00 - 15.30 hrs, Fri: 05.30-14.00.

- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 703-308-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.
- Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

kmv
May 27, 2003


YOGENDRA N. GUPTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700